

INVICTA

Model 31

General Description : Four-valve (including rectifier), four-waveband superheterodyne receiver for use with internal frame aerial or external aerial. Released April 1948.

Power Supply : A.C. mains, 200-250 volts, 40-100 c/s.

Wavebands : 14-60 m.; 60-200 m.; 200-550 m.; 900-2000 m.

Intermediate Frequency : 465 kc/s.

Valves : Mullard (V1) ECH35, frequency changer; (V2) EF39, I.F. amplifier; (V3) EBL31, double diode pentode; (V4) EZ35, rectifier (6 volt).

Note : On some receivers V4 is a Mullard AZ31 with suitable mains transformer to provide 4 volts instead of 6 volts. These valves may not be interchanged without also changing the transformer.

Dial Lamp : 6.2 volts, 0.3 amp.

Alignment Procedure :

(1) Inject 465 kc/s. from generator via a 0.1- μ F. capacitor to top cap of V1, a 100k resistor being connected from top cap to earth. Adjust all I.F.T. cores for maximum output.

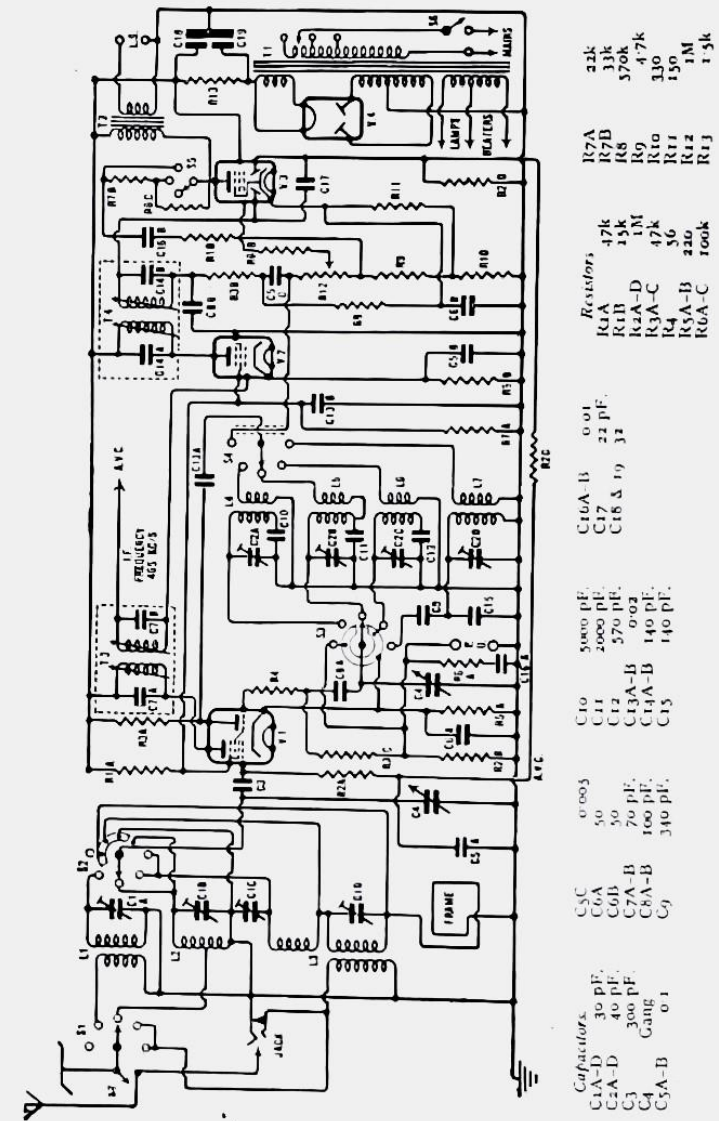
(2) Connect generator lead to aerial socket and adjust each band as follows :
200-550-m. : Set to 200 m. Inject 1500-kc/s. signal and adjust C1C and C2C for maximum output. Check at 500 m. (600 kc/s.).

900-2000-m. : Set to 1000 m. Inject 300-kc/s. signal and adjust C1D and C2D for maximum output. Check at 2000 m. (150 kc/s.).

14-40-m. : Set to 15 m. Inject 20-Mc/s. signal and adjust C1A and C2A for maximum output while rocking the gang for optimum results. Check at 40 m. (7.5 Mc/s.).

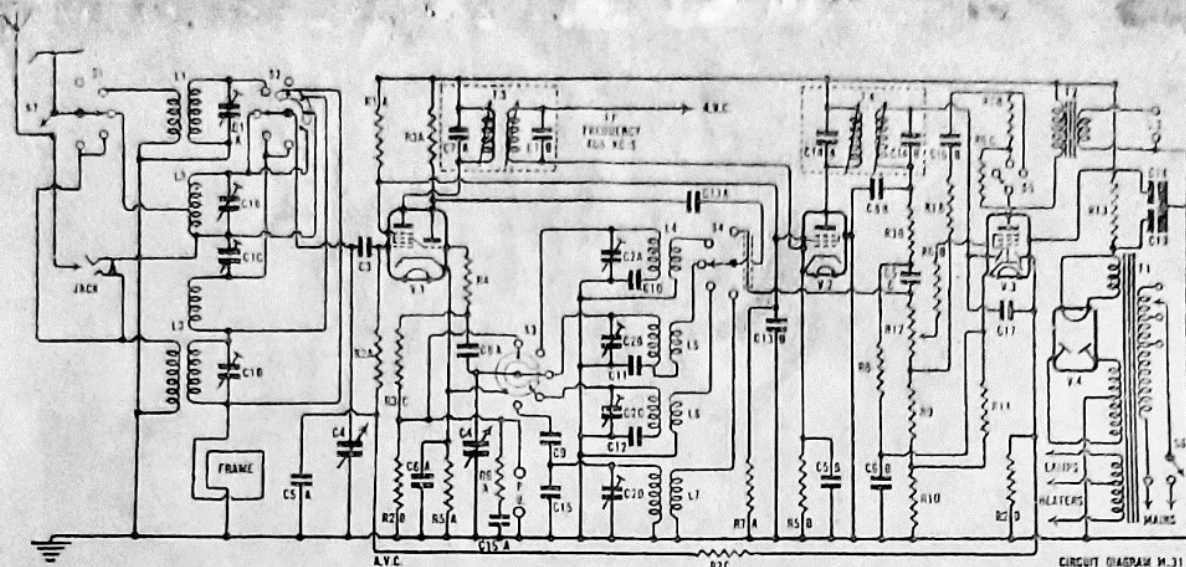
60-200-m. : Set to 60 m. Inject 5-Mc/s. signal and adjust C1B and C2B for maximum output. Check at 200 m. (1500 kc/s.).

Replacing Drive Cord : Turn vanes out. Thread one end of cord through rounded hole in the rim of the drive drum from outside to inside. Loop over centre boss. Take cord under upper pulley adjacent to drive drum, thread on pointer carrier, take cord anti-clockwise round extreme left-hand pulley, over remaining pulley and twice round drive spindle. Anti-clockwise round drive drum, through same hole in rim on to tension spring, which in turn is hooked over securing lug.



CIRCUIT DIAGRAM—INVICTA MODEL 31

INVICTA MODEL 31



C 1 A-D	30 pf. Trimmer	T1	Mains Transformer	P.N.77011
C 2 A-D	40 pf. Trimmer Strip P.N.66033	T2	Output	P.N.77015
C 3	300 pf. $\pm$ 20%	T3	1st I.F.	P.N. 523
C 4	537 pf. Gang Condenser P.N.2101	T4	2nd I.F.	P.N. 524
C 5 A-B	0.1 μ f.		Frame Aerial	P.N.73084
C 5 C	.005 μ f. Tubular Condenser		Aerial Jack	P.N.73067
C 6 A	50 μ f. 12 v. D.C.	R 1 A	15 k. ohm	1 watt
C 6 B	50 μ f. 50 v. D.C.	R 1 B	15 k. ohm	$\frac{1}{2}$ "
C 7 A-B	70 pf. $\pm$ 2%	R 2 A-D	1 m. ohm	$\frac{1}{2}$ "
C 8 A-B	100 pf. $\pm$ 5%	R 3 A-C	47 k. ohm	$\frac{1}{2}$ "
C 9	340 pf. $\pm$ 2%	R 4	56 ohm	$\frac{1}{2}$ "
C10	5000 pf. $\pm$ 2%	R 5 A-B	220 ohm	$\frac{1}{2}$ "
C11	2000 pf. $\pm$ 2%	R 6 A-C	100 k. ohm	$\frac{1}{2}$ "
C12	570 pf. $\pm$ 2%	R 7 A	22 k. ohm	$\frac{1}{2}$ "
C13 A-B	.02 μ f.	R 7 B	33 k. ohm	$\frac{1}{2}$ "
C14 A-B	140 pf. $\pm$ 2%	R 8	470 k. ohm	$\frac{1}{2}$ "
C15	140 pf. $\pm$ 5%	R 9	4.7 k. ohm	$\frac{1}{2}$ "
C16 A-B	.01 μ f.	R10	330 ohm	$\frac{1}{2}$ "
C17	22 pf. $\pm$ 5%	R11	150 ohm	$\frac{1}{2}$ "
C18 & 19	32 + 32 μ f. 350 v. D.C.	R12	1 m. ohm Volume Control	P.N.2209
L1 & L3	S.W.-M.W.-L.W.	R13	1.5 k. ohm 3 watt	
L2	Preselector Coil P.N.73083	S1-S4	W/C Switch P.N.83002	
L4-L5	Trawler Band	S5	Tone Control Switch P.N.2011	
L6-L7	Preselector Coil P.N.73082	S6	Mains Switch on volume control	
	S.W.-T.W. Oscillator	S7	Link operated on Inserting aerial plug	
	Coil P.N.73080			
	M.W.-L.W. Oscillator			
	Coil P.N.73081			

VALVE POSITIONS

(V1) ECH 35

(V2) EF 39

(V3) EBL 31

(V4) EZ 35



Made in London by

INVICTA RADIO LTD.

Radio Works, Parkhurst Road, London, N.7

INSTRUCTION BOOK and GUARANTEE CARD were packed with this Receiver when it left the Works. Please retain carefully for reference.